

Serial No.: 10/553,860

Examiner: David J. Goodwin

Title: FIELD EFFECT TRANSISTOR, ELECTRICAL ELEMENT ARRAY, AND MANUFACTURING METHOD FOR THE

SAME

Page 2 of 6

Amendments to the Claims:

This listing of claims will replace all prior versions, and listing, of claims in the application.

1-19. (Cancelled)

20. (Currently amended) A method for manufacturing an electrical element array including a n-type field effect transistor and a p-type field effect transistor on a substrate, comprising the steps of:

forming a gate electrode on a substrate;

forming a gate insulation layer on the gate electrode;

forming a source electrode and a drain electrode on the gate insulation layer;

forming a p-type semiconductor layer comprising carbon nanotube on the gate insulation layer and between the source electrode and the drain electrode so as to form a plurality of p-type field effect transistors on the substrate; and

forming a n-type modifying polymer layer only on a part of the p-type semiconductor layer of a p-type field effect transistor that is included in the plural p-type field effect transistors and that should be converted into a n-type field effect transistor by dispensing in an ink-jet method, the n-type modifying polymer layer being for converting a polarity of the carbon nanotube from an original polarity of p-type into n-type and for stabilizing the polarity, whereby only the part of the p-type semiconductor layer of the p-type field effect transistor that should be converted into n-type is converted into a n-type semiconductor layer so as to form a p-type field effect transistor and a n-type field effect transistor on the substrate.

21. (New) The method for manufacturing a field effect transistor according to claim 20, wherein the n-type modifying polymer is a polymer containing imine nitrogen.

22. (New) The method for manufacturing a field effect transistor according to claim 21, wherein the polymer containing imine nitrogen is polyalkylene imine.

Serial No.: 10/553,860

Examiner: David J. Goodwin

Title: FIELD EFFECT TRANSISTOR, ELECTRICAL ELEMENT ARRAY, AND MANUFACTURING METHOD FOR THE

SAME

Page 3 of 6

23. (New) The method for manufacturing a field effect transistor according to claim 22, wherein the polyalkylene imine is at least one selected from the group consisting of polyethylene imine, polypropylene imine and polybutylene imine.